

Application No. 09/325, 110
Amendment dated January 19, 2004
Reply to Office Action of November 7, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system for providing high frequency data communications in a satellite-based communications network, the system comprising:

a plurality of communications satellites each having uplink and downlink antennas capable of receiving and transmitting a plurality of signals, each of said satellites having a communication control circuit;

at least one of said satellites being a reconfigurable satellite having[[.]] a programmable frequency synthesizer coupled to a communications control circuit;

a routing table storing tuning information therein;

a controller located on said satellite coupled to said communications control circuit, said controller controlling a frequency reconfiguration of said communications control circuit through said programmable frequency synthesizer in response to said tuning information.

2. (Original) A system as recited in claim 1 wherein each of said satellites further comprising a beam forming network coupled to said uplink and downlink antennas.

3. (Original) A system as recited in claim 1 wherein said communications control circuit comprises an up converter and a down converter.

4. (Original) A system as recited in claim 1 wherein said communications control circuit comprises a transponder.

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5. (Original) A system as recited in claim 4 wherein said transponder comprises an up converter and a down converter.

6. (Original) A system as recited in claim 1 wherein said communications control circuit comprises a time division multiple access switch.

7. (Original) A system as recited in claim 1 wherein said communications control circuit comprises a packet switch.

8. (Original) A system as recited in claim 1 wherein said plurality of communications satellites have an orbit selected from the group consisting of a LEO, MEO and GSO.

9. (Canceled)

10. (Previously Presented) A payload circuit as recited in claim 15 wherein said communications control circuit comprises an up converter and a down converter.

11. (Previously Presented) A payload circuit as recited in claim 15 wherein said communications control circuit comprises a transponder.

12. (Original) A payload circuit as recited in claim 11 wherein said transponder comprises an up converter and a down converter.

13. (Previously Presented) A payload circuit as recited in claim 15 wherein said programmable frequency synthesizer is coupled to said up converter and

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said down converter.

14. (Canceled)

15. (Currently Amended) A payload circuit for a satellite comprising:
a receive array;
a receive beam forming network;
a transmit array;
a transmit beam forming network;
a communications control circuit for controlling communications of said
satellite; and

a reconfiguration circuit coupled to the communications control circuit for reconfiguring the communications control circuit, said reconfiguration circuit comprising a programmable frequency synthesizer, an on-board computer and a routing table having tuning information stored therein, said on-board computer controlling a reconfiguration of said communications control circuit through said programmable frequency synthesizer in response to said tuning information.

16. (Previously Presented) A payload circuit as recited in claim 15 wherein said communications control circuit comprises a time division multiple access switch.

17. (Previously Presented) A payload circuit as recited in claim 15 wherein said communications control circuit comprises a packet switch.

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18. (Currently Amended) A method of configuring a satellite system having a plurality of satellites comprising the steps of:

deploying a reconfigurable satellite;
transmitting reconfiguration instructions to said satellite;
reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in a routing table;
repositioning a satellite from a network position; and
moving the reconfigurable satellite into the network position.

19. (Previously Presented) A method as recited in claim 18 wherein the step of reconfiguring the payload comprises the step of changing an up converter frequency and down converter frequency.

20. (Currently Amended) A method as recited in claim 19 wherein the step of changing the up converter frequency and down converter frequency comprises the step of changing a frequency in a programmable frequency synthesizer.

21. (Original) A method as recited in claim 18 wherein the step of reconfiguring a satellite comprises changing the amplitude or phase coefficients of a transmit and receive beam.

22. (Previously Presented) A method as recited in claim 18 further comprising storing tuning information in a routing table.

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23. (Previously Presented) A method as recited in claim 18 wherein the step of reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in the routing table.

24. (Previously Presented) A method as recited in claim 18 wherein moving the reconfigurable satellite is performed using east/west station keeping.

25. (Previously Presented) A method as recited in claim 18 wherein moving the reconfigurable satellite is performed using north/south station keeping.

26. (Previously Presented) A method as recited in claim 18 further comprising updating the routing table from an order wire.

27. (Previously Presented) A method as recited in claim 18 further comprising updating the routing table from an RF control channel.

28. (Previously Presented) A method of configuring a satellite comprising:

deploying a reconfigurable satellite;
storing frequency tuning information in a routing table;
transmitting reconfiguration instructions to said satellite;
reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in the routing table.

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29. (Previously Presented) A method as recited in claim 28 wherein the step of reconfiguring the payload comprises changing the amplitude or phase coefficients of a beam in response to the tuning information in the routing table.

30. (Previously Presented) A method as recited in claim 28 further comprising updating the routing table from an order wire.

31. (Previously Presented) A method as recited in claim 28 further comprising updating the routing table from an RF control channel.